

## **ABSTRACT**

Thermostatic expansion valve for a vehicle air-conditioning system including a housing and a power element supported by the housing. The power element includes a diaphragm, and a pressure pad disposed against the diaphragm. The pressure pad may be formed in one piece from copper, a copper alloy, or another material, which material may also be a blend, composite, mixture, or other combination, having a thermal conductivity of at least about 800 BTU-in/hr-ft<sup>2</sup>-°F (115 W/m-K), and preferably 1200 BTU-in/hr-ft<sup>2</sup>-°F (170 W/m-K), and more preferably at least about 2000 BTU-in/hr-ft<sup>2</sup>-°F (280 W/m-K), and a density of at least about 0.3 lb/in<sup>3</sup> (8 g/cm<sup>3</sup>), and is connected via a stem to a valve element in the housing to control the refrigerant flow between the condensor and evaporator. The use of such material in the pressure pad reduces the susceptibility of the valve to external temperature changes and reduces the hunting of the valve.